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This contract su	apported my particip	oation in the wor	rking group on
the "Capturing	Uncertainty in the	Common Tactical	/Environmental
Picture" Departm	ment Research Initi as to hone the scien	ative (DRI). The	the DRI during
working group wa	preceding the larg	ar avnert worksh	on which took
a pilot period	er, 2000. The ult	imate goal of t	the DRI is to
develop a forma	lism for capturing,	calculating and	d representing
uncertainty 'By	uncertainty we mean	the environment	al variability
that is knowabl	e and that we can	n simulate, the	environmental
variability that	t is knowable but	that we cannot	simulate, the
environmental va	ariability that is	not knowable,	and the error
inherent in repr	resentations and cal	culations of the	environmental
field, acoustic	field, and target	estimation. My	work consisted
of active parti	icipation in the v	working group, p	oreparation of
supporting mater	cials and presentat:	ions at working	group meetings
and at the exper	t workshop.		
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FINAL TECHNICAL REPORT ONR GRANT N00014-00-1-0770 ROBERT N. MILLER

Capturing Uncertainty in the Common Tactical/Environment Picture

I participated in the working group on the "Capturing Uncertainty in the Common Tactical/Environmental Picture" DRI. My participation consisted of attendance at the meetings, preparation of supporting materials and active contribution to the design and specification of the illustrative problem.

The stated goal of the DRI was to characterize, calculate and transfer uncertainty in the environment to calculations of acoustic fields and to the subsequent use of the acoustic fields in estimation and displaying of targets. Quantitative description of the transfer of uncertainty in the environment to calculations of acoustic fields, especially those involving prediction of environmental conditions, requires application of mathematical techniques drawn from statistics, probability theory and theory of stochastic processes. Similar techniques are required for data assimilation.

During the course of my funded participation in the steering committee for the DRI, I attended the meetings of the steering committee and contributed to the specifications of the problem. I consulted with other groups on ocean modeling and data assimilation considerations, and prepared several presentations for meetings of the steering committee and for the experts meeting held at Airlie House in October. Copies of the presentation and the poster are available on the web at the addresses shown below.

LIST OF PUBLICATIONS

"Bayesian Inference." With L. Stone. available in PDF or PowerPoint form from www.onr.navy.mil/sci_tech/chief/cuwg/Workshop/Posters/posters.html

"Methods for Propagation of Uncertainty." Available in PowerPoint form from www.onr.navy.mil/sci_tech/chief/cuwg/Workshop/Agenda/agenda.html